CLAIMS
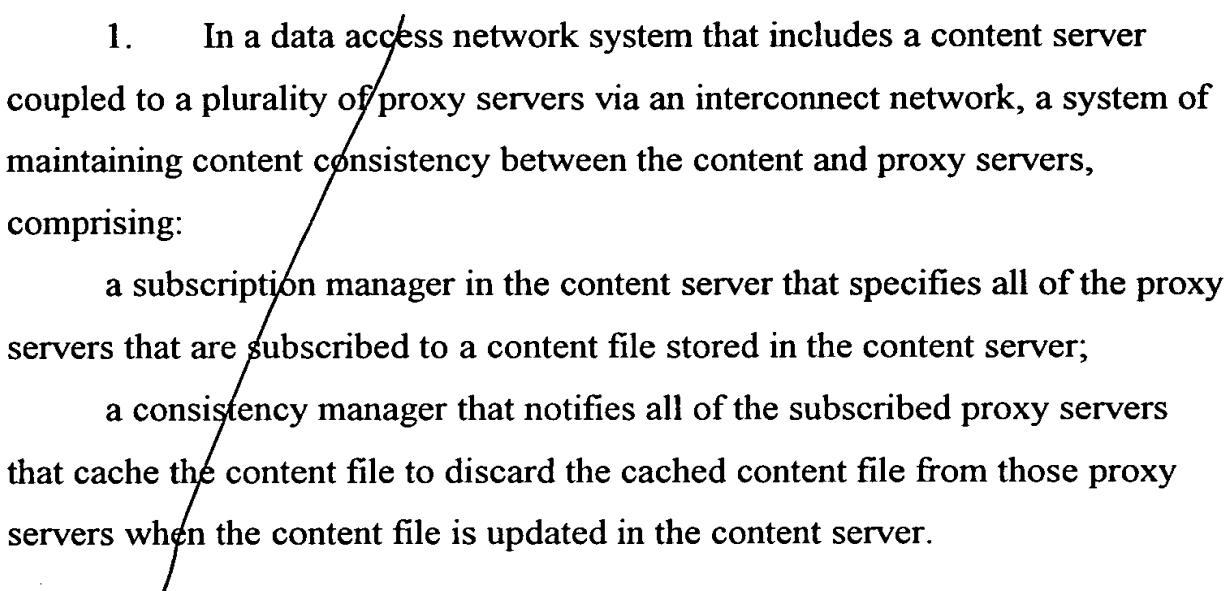
What is claimed is:

1.   In a data access network system that includes a content server coupled to a plurality of proxy servers via an interconnect network, a system of maintaining content consistency between the content and proxy servers, comprising:

a subscription manager in the content server that specifies all of the proxy servers that are subscribed to a content file stored in the content server;

a consistency manager that notifies all of the subscribed proxy servers that cache the content file to discard the cached content file from those proxy servers when the content file is updated in the content server.

2.   The system of claim 1, wherein the subscription manager generates a subscription list that specifies all of the subscribed proxy servers that cache the content file when the subscription manager is notified by each of the proxy servers that it has cached the content file.

3.   The system of claim 2, wherein a proxy server notifies the subscription manager that it has cached the content file via an HTTP GET request with a SUB (Subscription) header when the proxy server decides that the content file should be subscribed.

4.   The system of claim 3, wherein if the proxy server decides that the content file is not a popular file, then that proxy server does not notify the

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subscription manager that it has cached the content file.

5.   The system of claim 1, wherein the consistency manager notifies each of the subscribed proxy servers via a DWS INV message when a content file has changed.

~Sub~ 6.   The system of claim 1, wherein the consistency manager also sends the updated content file to each of the proxy servers via an HTTP PUT request with a DWS SUB header.

7.   The system of claim 1, wherein the consistency manager notifies all of the proxy servers specified by the subscription manager to discard the cached content file from the proxy servers when the content file is updated or deleted in the content server within a predetermined time interval.

~Sub AQ~   8.   In a data access network system that includes a content server coupled to a plurality of proxy servers via an interconnect network, a method of maintaining content consistency between the content server and the proxy servers, comprising the steps of:

maintaining a subscription list for a content file in the content server that specifies all of the proxy servers that are subscribed to the content file;

notifying, based on the subscription list, all of the subscribed proxy servers that cache the content file to discard the cached content file from those proxy servers when the content file is updated in the content server.

9. The method of claim 8, further comprising the step of receiving, in the content server, a notification from each of the proxy server that it has cached the content file in order to maintain the subscription list.

10. The method of claim 9, wherein each of the proxy servers sends the notification to the content server using an HTTP GET request with a SUB header.

11. The method of claim 10, wherein each of the proxy servers only sends the notification to the content server when it determines that the content filed cached is a popular file that has been accessed frequently from the corresponding proxy server by user terminals.

12. The method of claim 8, wherein the step of notifying all of the proxy servers is performed using a DWS INV message.

13. The method of claim 8, wherein the step of notifying further comprises the step of sending the updated content file to each of the proxy servers via an HTTP PUT request with a DWS SUB header.

14. The method of claim 8, wherein the step of notifying all of the proxy servers is performed when the content file is updated in the content server within a predetermined time interval.

15. The method of claim 8, wherein the step of maintaining a

subscription list is performed by a subscription manager in the content server and the notification step is performed by a consistency manager in the content server.